mixture, vaporizing at least one additive, i.e., a nitrogen oxides reducing substance, by the heat released in the pyrotechnic reaction, and converting nitrogen oxides in the gas mixture to non-toxic compounds in a homogeneous gas phase reaction by reaction with the vaporized additive, i.e., the vaporized nitrogen oxides reducing substance. Claims 11 - 16 recite that the at least one additive is selected from the group consisting of metallocenes, metallocene derivatives, sulfur, and sulfur compounds. Claims 16 - 20 recite that the nitrogen oxides reducing substance consists essentially of at least one compound selected from the group consisting of metallocenes, metallocene derivatives, sulfur and sulfur compounds, while claims 21 - 25 recite that the nitrogen oxide reducing substance consists of at least one compound selected from the group consisting of metallocenes, metallocene derivatives, sulfur and sulfur compounds.

The Redecker et al document is directed to a propellant for gas generators consisting of nitrogen containing compounds. The propellant is characterized by the fact that it contains (a) as a nitrogen-containing compound (fuel) at least one compound from the group consisting of tetrazoles, triazoles, triazines, cyanuric acid, urea, their derivatives, substitution products or salts, (b) as an oxidation agent, at least three compounds from the group consisting of peroxides, nitrates, chlorates or perchlorates, (c) combustion moderators that are suitable for affecting the combustion and its rate through heterogeneous or homogeneous catalysis, and optionally (d) additives that are suitable for reducing the fraction of toxic gases. The Redecker et al document discloses that the moderators that

interfere in the reaction in the form of a homogeneous catalysis are, for example, sulfur, boron, silicon or ferrocene and its derivatives. However, this set of compounds is only one choice for the combustion modifiers, the other being moderators that interfere in the reaction in the form of a heterogeneous catalysis. Moreover, this document envisions the use of another class of additives for reducing nitrogen oxides.

The present inventors have found that some of the compounds employed in the gas producing mixture described in the Redecker et al document as combustion modifiers can be used in a specific manner for reducing nitrogen oxides. In doing so, no further nitrogen oxides reducing substance is necessary. According to the present invention, after vaporizing the nitrogen oxides reducing substance, i.e., metallocenes, metallocene derivatives, sulfur and sulfur compounds, the nitrogen oxides in the gas mixture are converted to non-toxic compounds in a homogeneous gas phase reaction with the vaporized additive. In Redecker et al, there is a clear teaching to use compounds other than metallocenes, metallocene derivatives, sulfur and sulfur compounds to reduce nitrogen oxides. See, the second and third full paragraphs of page 7 of the English translation of Redecker et al.

Since the Redecker et al. document clearly discloses using compounds other than metallocenes, metallocene derivates, sulfur and sulfur compounds to reduce nitrogen oxides, clearly these NO_x reducing additives perform a significant function in terms of converting nitrogen oxides. With these NO_x reducing additives present, it is not clear what function, if any, the combustion moderators of Redecker et al. perform in terms of converting

nitrogen oxides. Therefore, it can not be said that the Redecker et al. method inherently involves converting nitrogen oxides in the gas mixture to non-toxic compounds in a homogenous gas phase reaction with the vaporized combustion modifiers.

The Examiner dismisses Applicant's arguments as not being convincing, alleging that "applicant has not explained why the sulfur or ferrocene or its derivatives, present in the composition of Redecker et al. as a combustion moderator, would not inherently convert nitrogen oxides in the gas mixture to non-toxic compounds..." However, Applicants have provided a sufficient basis, i.e., the presence of additional NO_x reducing additives in Redecker et al., for showing that the Redecker et al. method does not inherently involve converting nitrogen oxides in the gas mixture to non-toxic compounds in the homogenous gas phase reaction with the vaporized combustion modifiers.

The Examiner has done nothing more than allege the Redecker et al. method may convert nitrogen oxides in the gas mixture to non-toxic compounds in the homogenous gas phase reaction with the vaporized combustion moderators. This is not sufficient to establish inherency. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert,* 9F3d 1531, 1534, 28 U.S.P.Q 2d 1955, 1957 (Fed. Cir. 1993); *In re Oelrich,* 666 F2d 578, 581-582, 212 U.S.P.Q. 323, 326 (CCPA 1981). As stated by the Court of Appeals for the Federal Circuit:

> To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would so be recognized by the persons of ordinary skill. Inherency, however, may

not be established by probabilities or possibilities. The mere fact that a certain thing may result from a giving set of circumstances is not sufficient."

In re Robertson, 169 F. 3d 743, 745, 49 U.S.PQ. 2d 1949, 1950-51 (Fed. Cir. 1999).

Accordingly, the present invention is not inherent from the teachings of Redecker et al.

As to claims 16 - 25, Redecker et al document clearly does not suggest a method for reducing nitrogen oxides in which the nitrogen oxides reducing substance consists essentially of or consists of at least one compound selected from the group consisting of metallocenes, metallocene derivatives, sulfur and sulfur compounds. To the contrary, the Redecker et al document clearly suggests the use of other nitrogen oxide reducing substances.

The Examiner dismisses Applicant's arguments with respect to claims 16-25 and alleges that, when NO_x reducing additives of Redecker et al. "are employed in the outflow channels in the generator in the form of tablets, pills or granulates, the additives would not be vaporized, and the nitrogen oxides reducing substance which would then be vaporized in the process of Redecker et al. would 'consist of' or 'consist essential of' the sulfur or ferrocene and its derivatives." However, the Examiner provides no basis for concluding that the additives in the outflow channels would not be vaporized. To the contrary, it is presumed that the additives in the outflow channels of Redecker et al. are at least partially vaporized by the hot gases so as to carry out their intended function. Accordingly, the NO_x reducing additives in

Redecker et al. would not "consist of" or "consist essentially of" sulfur or ferrocene.

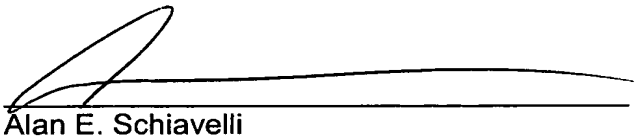
For the foregoing reasons, the presently claimed invention is neither disclosed nor suggested by Redecker et al.

In view of the foregoing remarks, favorable reconsideration and allowance of all of the claims now in the application are requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 306.37599X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



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